

Daily GLOWBUGS

Digest: V1 #30

via AB4EL Web Digests @ SunSITE

Purpose: building and operating vacuum tube-based QRP rigs

[AB4EL Ham Radio Homepage @ SunSITE](#)

%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

Subject: glowbugs V1 #30

glowbugs

Tuesday, May 13 1997

Volume 01 : Number 030

Date: Mon, 12 May 1997 01:08:35 -0500

From: Conard Murray <ws4s@InfoAve.Net>

Subject: Re: Question for AN/GR109 ops

Hi John,

I have had three seperate GRC-109 setups and they all have the signal loss through the transmitter that you mention. I assumed that that was intentional given the receiver's high gain.

In my imagination, I can see if only the receiver was being used then a short temporary antenna connected straight to the receiver would probably be thrown out with the receiver's high gain taking up the slack. If the transmitter was set up also, then a longer antenna would probably be used with the possibility of receiver overload. I figured the light coupling was designed into the set for this reason.

I measured all the components in my first transmitter while pondering the problem and everything was as shown on the schematic. I did find a pair of shorted diodes in one transmitter though.

My receiver has plenty of gain to compensate for the light coupling. With a Hi-Z headset I can easily copy 80M signals with the gain barely opened and 20M is down to the band noise floor at halfway open. The dial calibration is so close as to be scary on all three bands.

Good luck,

ZUT!

Conard WS4S

Date: Mon, 12 May 97 10:47:07 EDT

From: jkh@lexis-nexis.com (John Heck)

Subject: RK-18's

Folks,

Managed to pick up a handfull of nice old Raytheon transmitting tubes and wish to evaluate them a little. One of the RK-18's has a distinct sound of metal brushing

metal when the tube is rotated in the hand. I thought perhaps the filament was broken but when I put this tube in my Jackson tester and set the filament voltage on 7.5v it lit up fb. What I noticed was that the glow from the filament was really *bright*, like a light bulb. Does anyone know 1) Is this bright glow normal for a tube this size?, and 2) Is there a tube which has test specs like the RK-18, the RK-31, and the RK-39, which I can use to do a preliminary checkout on these tubes? I mean, are they enough like an 807, for example, to use the 807 tester settings to give me an idea if they are still operational? Thanks.

Regards,
John Heck, KC8ETS
1009 Donson Drive
Dayton, Ohio 45429
(513)865-7036(work)
jkh@lexis-nexis.com

Date: Mon, 12 May 1997 08:51:20 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: Mute input for the Clegg 99er?

Hi gang--

For the time being, at least, I'm going to use the 99er's receiver as the receiver side of my 6M AM setup, with the newly resurrected TX-62 as the transmitter. A receiver mute input would be nice; otherwise I have to turn the volume down every time I transmit. So I went to the file cabinet for the 99er's book Saturday night and the cupboard was bare. I know the book came with the box, but it's been years since I've had to fool with it.

The book is probably around somewhere, but if anybody else has the book or knows the box, could you tell me if the octal socket on the back apron of the 99er has a receiver mute input? If so, which pin?

I wasn't home last night for the Junkbox Net, but by next Sunday I hope to have the new and more powerful setup in place.

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Mon, 12 May 1997 09:20:00 -0700
From: "Bowman, Jim" <Jim_Bowman@ATK.COM>
Subject: RE: Elmac AF-68

John, I had an Elmac AF-67 years ago, and as I recall, the battery is to supply grid bias for the modulator tubes. It seems to me that the battery was supposed to last just about the shelf life of the battery, because the current demand was so small. Someone else may be able to comment as to how critical the voltage is. You could always put 3 of the 1.5 volt AA or AAA batteries in series with your two 9 volt batteries to tweak up to 22.5

good luck,

Jim W7HPK
Jim_Bowman@ATK.COM

From: John Lockhart
To: glowbugs@www.atl.org
Subject: Elmac AF-68
Date: Fri, May 9, 1997 4:41PM

Hi!

Any suggestions on what to use for the 22 1/2 volt battery the Multi-Elmac AF-68 transmitter uses in the modulator circuit? Would two 9 volt batteries in series be "close enough"? Other ideas?

Thanks,

John W0DC

Date: Mon, 12 May 1997 10:34:35 -0700 (MST)
From: Jeff Duntemann <jeffd@coriolis.com>
Subject: AN/GRC-109 serial #72

Hi gang--

Well, the GRC-109 box just arrived from Fair Radio. And I have to say, this is not your typical "War Is Hell" surplus that has kept me from owning military gear these past 25 years. Although all three components have obviously been used, I would guess they weren't used a *lot*--and whoever used them kept them fairly clean. The receiver in particular is a gem...and it's marked as being serial # 72. That seems awfully low somehow--and the cover plate (which is much grubbier) is marked Serial # 227. What other serial numbers are in the hands of list members. It looks like they only have room for 3 digits on the serial # plate. Could there have been that few manufactured?

I'm tempted to buy another receiver for my nephews. How many kids can say they got a Real Live Spy Radio for 8th grade graduation? If anybody has a loose power socket compatible with that 4-pin receiver power plug I'd gladly trade a couple of ceramic octal sockets for it.

The transmitter has seen some harder use and more dirt, and the PS most of all--but all are leagues beyond the stuff I usually see on hamfest tables.

I'll take me a week or so to get these items whipped into shape (maybe less--will I get lucky?) but I'm looking forward to it. CW on a \$2000 Icom really loses something...

- --73--

- --Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Mon, 12 May 1997 13:15:22 -0500 (CDT)
From: mjsilva@ix.netcom.com (michael silva)
Subject: AN/GRC-109 -- one gotcha

Hi all,

This radio does sound like a neat piece of kit, and I'm tempted to order one myself, but according to the Fair Radio catalog it uses the dreaded 1L6 tube for the receiver mixer. For those who don't follow the ins and outs of the tube market, the 1L6 is becoming unobtainium. Prices have gone from around \$10 a couple of years ago to \$30-\$35 now. There *are* a few work-arounds, involving various amounts of rewiring and/or socket changeovers, etc. Is there room in the radio for an octal or loctal socket in place of the 1L6 socket?

73,
Mike, KK6GM

Date: Mon, 12 May 1997 13:54:12 -0500
From: Conard Murray <ws4s@InfoAve.Net>
Subject: Re: AN/GRC-109 -- one gotcha

Yup, the 1L6 is the bugaboo of this fine receiver. There is no room whatsoever for an octal/loctal socket in there. It is pretty dense construction. I tried a 1R5-with-the-clipped-pin 1L6 substitute and the set didn't even operate.

I did see a solid-state mixer engineered to replace the 1L6 on Padgett Osirius' Transoceanic homepage that looked interesting though.

Conard Murray WS4S Glowbugs Listowner
217 Dyer Avenue QRP-L #998
Cookeville, TN 38501 Arizona scQRPion
615-526-4093

Friend to all things GRC-19 and TCS
<>< Wise men still seek Him ><>

Date: Mon, 12 May 1997 14:59:32 -0400
From: John <johnmb@mindspring.com>
Subject: Re: AN/GRC-109 -- one gotcha

Then at \$25 bucks for whole receiver, this is a bargain !!!
:-)
/John

At 01:15 PM 5/12/97 -0500, you wrote:

>Hi all,
>

>This radio does sound like a neat piece of kit, and I'm tempted to
>order one myself, but according to the Fair Radio catalog it uses the
>dreaded 1L6 tube for the receiver mixer. For those who don't follow
>the ins and outs of the tube market, the 1L6 is becoming unobtainium.
>Prices have gone from around \$10 a couple of years ago to \$30-\$35 now.
>There *are* a few work-arounds, involving various amounts of rewiring

> Chris buys a NBS-1 (National Beureau of Standards #1?) at
> a ham swap in Texas and Jim, who is at NBS/NIST, still has
> the original manual for the beast, 1500 miles and 40+
> years away. And he'll make a copy of it for Chris for free.
>
> I love this place!

Hey... me too.....

..... now if I could just find that missing page 9 of the SE 1420 manual,
and the manual to the SE 1440, CGR-5A, BC-131, and BC-144.

But, it is a most refreshing bit of joy when one has the success of
finding that treasured missing tidbit, from amongst the group.

It is almost like the treasure trove o' Spanish galleons.

I doff me bowler ta da group!

73/ZUT DE NA4G/Bob UP

Date: Mon, 12 May 1997 18:10:13 -0500 (CDT)
From: "Carol N. Wright" <cnw@HiWAAY.net>
Subject: RE: Elmac AF-68

Hey Gang,
There are some 22.5 volt batteries available from this URL for \$5 I think.
<http://www.sciplus.com/cgi-bin/basket/863296252.45/wired/25459.html>
I was searching the web and found them. Take a look at them and see if
this is what you're looking for. Best 73 DE Matt, AE4JM

Date: Mon, 12 May 1997 20:06:06 +0000
From: "Lawrence R. Ware" <lrware@pipeline.com>
Subject: WTB: pair of sockets and chimneys

Good Evening folks, I want/need a pair of ceramic sockets and cooling
chimneys for a set of type 7609 air cooled power tubes. These are
mechanically the same as 4CX250's.

Used or NOS is fine, what have you got?
- -Larry

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Intensive Care, Private Bench Space, Frequent Use,
Factory trained HP, Tek & Fluke Surgeon on staff.
Good Home Guaranteed or double your junk back!
lrware@pipeline.com - Orlando, FL -

Date: Mon, 12 May 1997 20:28:36 -0700

```
>NR 001
>T
>RR NOALL
>DE NAV 053
>R 121712Z MAY 97
>FM CHNAVMARCORMARS WASHINGTON DC
>TO ALNAVMARCORMARS
>BT
>UNCLAS
>SUBJ: 48TH ARMED FORCES DAY COMMUNICATIONS CELEBRATION
>1. MILITARY-TO- AMATEUR CROSS-BAND OPERATIONS WILL TAKE PLACE
>FROM 171300Z - 181300Z (UTC) MAY 97. MILITARY STATIONS WILL
>TRANSMIT ON SELECTED MILITARY FREQUENCIES AND WILL ANNOUNCE THE
>SPECIFIC AMATEUR FREQUENCIES THEY ARE MONITORING WITHIN VARIOUS
>BANDS (SEE LIST OF FREQUENCIES BELOW). THE DURATION OF EACH
>CONTACT SHOULD BE LIMITED TO 3 MINUTES. THESE FREQUENCIES ARE
>THE ASSIGNED FREQUENCIES, TO DERIVE WINDOW/DIAL FREQUENCY DROP
>1.5 KHZ.
>STATION          MILITARY          EMISSION          AMATEUR
>BAND             FREQUENCY
>AAE              4030.5 KHZ          LSB              80 METERS
>ARMY HF/MARS RADIO STA 7358.5 KHZ          RTTY/LSB        40 METERS
>FORT SAM HOUSTON, TX  13994.5 KHZ         USB              20 METERS
>78234-5000        20941.5 KHZ         USB              15 METERS
>                  27992.5 KHZ         USB              10 METERS
>POC: MR ED VALDEZ DSN 471-3524/3003, COM: (210) 221-2524/3003
>AAH              4021.5 KHZ          VARIOUS          75 METERS
>ARMY HF/MARS RADIO STA 6988.0 KHZ (N)    VARIOUS          40 METERS
>BLDG 3E95        7312.5 KHZ (D)    VARIOUS          40 METERS
>FORT LEPSS, WA   10151.5 KHZ         USB              30 METERS
>98433-5000       14488.5 KHZ         USB              20 METERS
```

> 18212.5 KHZ USB 17 METERS
 > 20975.0 KHZ USB 15 METERS
 >POC: MR CHUCK VERDON DSN 357-2502/3575, COM: (206) 967-2502/3575
 >NOTE: N = NIGHT, D = DAY
 >AAZ 4036.6 KHZ LSB 80 METERS
 >HQ USAISC 6908.0 KHZ USB 40 METERS
 >COMMAND HF/MARS RADIO 7422.5 KHZ RTTY/LSB 40 METERS
 >STATION ATTN: ASOP-HF 13965.0 KHZ USB 20 METERS
 >FORT HUACHUCA, AZ 21825.5 KHZ USB 15 METERS
 >85613-5000 27790.0 KHZ USB 10 METERS
 >POC: MRS KATHY EDWARDS, DSN 879-7933/8286, C:E(602) 879-7933/8286
 >AIR 4025.0 KHZ LSB 80 METERS
 >89TH COMMUNICATIONS SQ 6896.0 KHZ USB 40 METERS
 >ANDREWS AIR FORCE BASE 7315.0 KHZ LSB 40 METERS
 >WASHINGTON, DC 20762 13986.5 KHZ RTTY 20 METERS
 > 13997.5 KHZ USB 20 METERS
 > 14408.0 KHZ USB 20 METERS
 >POC: MR VAN EVANS, DSN 858-4746, COM: (301) 981-4746
 >WAR 4018.5 KHZ LSB 80 METERS
 >ARMY HF/MARS RADIO STA 6997.5 KHZ USB 40 METERS
 >FORT DETRICK, MD 7361.5 KHZ VARIOUS 40 METERS
 >21702-5016 13992.5 KHZ RTTY 20 METERS
 > 14403.5 KHZ USB 20 METERS
 > 21995.5 KHZ USB 15 METERS
 >POC: MR RONNIE OWENS, DSN 343-2727, COM: (301) 619-2727
 >NAV-2 4015.2 KHZ RTTY/USB 80 METERS
 >MARS RADIO STATION 7365.0 KHZ RTTY/USB 40 METERS
 >1050 REMOUNT ROAD 14471.5 KHZ RTTY/USB 20 METERS
 >BLDG 3231 20680.0 KHZ RTTY/USB 15 METERS
 >NORTH CHARLESTON, SC 29406-3542
 >POC: ETCS LAVERGE, DSN 563-2929, COM: (803) 743-2929
 >NMH 4011.0 KHZ RTTY/USB 80 METERS
 >USCG TELECOMMUNICATION 7 7385.0 KHZ RTTY/USB 40 METERS
 >INFORMATION SYSTEM CMD 14385.0 KHZ RTTY/USB 20 METERS
 >7323 TELEGRAPH ROAD 20375.0 KHZ RTTY/USB 15 METERS
 >ALEXANDRIA, VA 22315-3940
 >POC: LTJG DAVID, NO DSN LINE AVAILABLE, COM: (703) 313-5568
 >MCL 4008.5 KHZ RTTY/USB 80 METERS
 >MARS RADIO STATION 7375.0 KHZ RTTY/USB 40 METERS
 >BASE CEO BLDG 24 14480.0 KHZ RTTY/USB 20 METERS
 >MARINE CORPS BASE 20937.5 KHZ RTTY/USB 15 METERS
 >CAMP LEJEUNE, NC 28542
 >POC: SGT BIGGS, DSN 484-5116, COM: (910) 451-5116
 >NAV-8 4040.0 KHZ RTTY/USB 80 METERS
 >MARS RADIO STATION 7372.5 KHZ RTTY/USB 40 METERS
 >530 PELTIER AVENUE 10259.5 KHZ RTTY 30 METERS
 >HONOLULU, HI 96818 14393.0 KHZ USB 20 METERS
 > 20625.0 KHZ USB 15 METERS
 >POC: RMC (SW/AW) DOBBINS, DSN 471-0029, COM: (808) 471-0029
 >NUW 4826.5 KHZ RTTY/USB 80 METERS
 >MARS RADIO STATION 7380.0 KHZ RTTY/USB 40 METERS
 >260 W. PIONEER FSC BLDG 13530.0 KHZ RTTY/USB 20 METERS
 >NAS WHIDBEY ISLAND, WA 19956.5 KHZ RTTY/USB 15 METERS
 >98277
 >POC: MR O'DELL, DSN 820-8038, COM: (360) 675-2823
 >MQU 4021.5 KHZ RTTY/USB 80 METERS
 >MARS RADIO STATION 7346.5 KHZ RTTY/USB 40 METERS
 >D.C.I.D. - MCCDC 14840.0 KHZ RTTY/USB 20 METERS
 >QUANTICO, VA 23134 20988.5 KHZ RTTY/USB 15 METERS
 >NBL 4803.5 KHZ LSB 80 METERS

>MARS RADIO STATION 7370.0 KHZ LSB 40 METERS
 >NEW LONDON BOX 200 14465.0 KHZ USB 20 METERS
 >POC: MR GERRY SCARANO, DSN 241-3716, COM: (860) 449-3716
 >2. DIGITAL TRANSMITTING TESTS - DIGITAL TRANSMISSION TEST WILL
 >BEGIN ON MAY 18 UTC) AT THE FOLLOWING TIMES: 0340 UTC (RTTY, 100
 >WPM, NARROW SHIFT): 0440 UTC (PACTOR): AND 0540 UTC (AMTOR). A 10
 >MINUTE CALL FOR TUNING PURPOSES WILL BEGIN AT 0330 UTC FOR RTTY,
 >0430 UTC FOR PACTOR AND 0530 UTC FOR AMTOR. THEN A MESSAGES FROM
 >THE SECRETARY OF DEFENSE WILL BE TRANSMITTED FROM THE FOLLOWING
 >STATIONS ON THE FREQUENCIES LISTED. (NOTE: NOT ALL STATIONS MAY
 >NECESSARILY OPERATE ON ALL THE FREQUENCIES LISTED, DEPENDING ON
 >PROPAGATION AND EQUIPMENT). TRANSMITTING STATIONS AND THEIR
 >FREQUENCIES ARE :
 >AAE 7358.5
 >ARMY HF/MARS RADIO STATION, FORT SAM HOUSTON, TX
 >AAH 69880, 144885
 >ARMY HF/MARS RADIO STATION, FORT LEWIS, WA
 >AAZ 7422.5
 >HQ USAISC, COMMAND HF/MARS RADIO STATION, FORT HUACHUCA, AZ
 >AIR 13986.5
 >89TH COMMUNICATIONS SQUADRON ANDREWS AFB, WASHINGTON, DC
 >WAR 13992.5
 >ARMY HF/MARS RADIO STATION, FORT DETRICK, MD
 >NAV-2 7365.0, 14471.5
 >NAVY-MARINE CORPS MARS RADIO STATION, NORTH CHARLESTON, SC
 >NMH 7385.0, 14385.0
 >USCG HF/MARS RADIO STATION, ALEXANDRIA, VA
 >MCL 7375.0, 14480.0
 >MARINE CORPS BASE, CAMP LEJEUNE, NC
 >NAV-8 7372.5, 10259.5
 >NAVY-MARINE CORPS MARSNRADIO STATION, HONOLULU, HI
 >NUW 7380.0, 13530.0
 >NAVY-MARINE CORPS MARS RADIO STATION, NAS WHIDBEY ISLAND, WA
 >MQU 7346.5, 14840.0
 >MARS RADIO STATION, QUANTICO, VA
 >NBL 7370.0, 14465.0
 >NAVY-MARINE CORPS MARS RADIO STATION, GROTON, CT
 >3. SUBMISSION OF DIGITAL TEST ENTRIES
 >TRANSCRIPTION OF THE RTTY RECEIVING TEST SHOULD BE SUBMITTED AS
 >RECEIVED. NO ATTEMPT SHOULD BE MADE TO CORRECT POSSIBLE
 >TRANSMISSION ERRORS. PROVIDE TIME, FREQUENCY AND CALL SIGN OF
 >THE MILITARY STATION COPIED, INCLUDING NAME, CALL SIGN AND
 >ADDRESS (INCLUDING ZIP CODE) OF INDIVIDUAL SUBMITTING THE ENTRY.
 >ENSURE THIS INFORMATION IS PLACED ON THE PAGE CONTAINING THE TEST
 >MESSAGE. EACH YEAR A LARGE NUMBER OF ACCEPTABLE ENTRIES ARE
 >RECEIVED WITH INSUFFICIENT INFORMATION, OR NECESSARY INFORMATION
 >WAS ATTACHED TO THE TRANSCRIPTION AND WAS SEPARATED, THEREBY
 >PRECLUDING ISSUANCE OF A CERTIFICATE. ENTRIES MUST BE POSTMARKED
 >NO LATER THAN 31 MAY 1997 AND SUBMITTED TO THE RESPECTIVE MILITARY
 >COMMAND AS FOLLOWS:
 >A. STATIONS COPYING AIR SEND ENTRIES TO:
 > ARMED FORCES DAY CELEBRATION
 > 89CS/SCOJM, ALABAMA AVE., SCS-3
 > ANDREWS AIR FORC ?-'3
 > WASHINGTON, DC 20762
 >B. STATION COPYING NAV-2, NMH, MCL, NAV-8 NUW, MQU, AND NBL
 > SEND ENTRIES TO:
 > ARMED FORCES DAY CELEBRATION
 > CHIEF, NAVY-MARINE CORPS MARS
 > 4401 MASSACHUSETTS AVE. N.W.

> WASHINGTON, DC 20394-5460
>C. STATIONS COPYING AAE, AAH, AAZ OR WAR SEND ENTRIES TO:
> ARMED FORCES DAY CELEBRATION
> U S ARMY SIGNAL COMMAND
> ATTN: ASFC-OPT-BC
> FORT HUACHUCA, AZ 85613-5000
>4. OTHER AMATEUR ACTIVITY. IN ADDITION TO THE PROGRAM OUTLINED
>ABOVE AMATEUR RADIO STATIONS AT NAVY AND MARINE CORPS ACTIVITIES
>SHOULD ENGAGE IN CONTACTS WITH OTHER AMATEUR RADIO STATIONS,
>HANDLE BOAFIDE TRAFFIC, AND AVOID ARTIFICIAL GENERATION OF
>MESSAGES SUCH AS 'GREETING ON ARMED FORCES DAY.'
>5. ACTION. ALL COMMANDS SHOULD DISTRIBUTE THE INFORMATION
>CONTAINED IN THIS NOTICE TO ALL QUALIFIED AMATEUR RADIO OPERATORS
>AND RADIO STATIONS WITHIN THEIR JURISDICTION.
>BT
>NNNN
>
>
>Erskine D. "ED" Wyatt
>KC4QYM/ NNN0RBD
>ewyatt@juno.com

Date: Mon, 12 May 1997 22:39:45 -0600
From: John & Rose Crawford <crawfordj@earthlink.net>
Subject: [none]

set mail postpone

Date: Tue, 13 May 1997 13:20:24 +0200
From: Jan Axing <janax@li.icl.se>
Subject: Maximum tube operating voltages explained

(My reply to the 6T9 thread went into the bit bucket. If you have seen this before then I'm sorry for the multiple...)

Hi all;

I recently saw some questions on the max operating voltage of tubes. I did some research in an old Philips tube manual and found this; (cited directly from the book)

"During operation the DC anode or screen voltages should not exceed the max. stated value for Va or Vg2."

"If, during operation, both an alternating and a direct voltage are present simultaneously on anode or screen grid, the peak value may approach (but should not exceed) the max. limit for Vao or Vg2o on the condition that the instantaneous value of the current at that moment is approximately zero."

Va = 300V and Vao = 550V for 6GW8/ECL86. The manual defines Vao as "voltage at cutoff".

My interpretation of this; for a resistance loaded amplifier the B+ should be max 550V and operating point plate max 300V. For a

choke coupled amplifier like the ubiquitous RF power amp shunt fed with a choke, B+ should be max 300V. The tank will flywheel the instantaneous plate voltage well above but should stay under 550V. Max B+ in class C service is a little more complicated but you can probably increase B+ a little since the tube is well into cutoff when the tank peaks. Keep the plate dissipation, though. That is if you want to stay within the specs, but who does? <g>

73 all

- - -

Jan, SM5GNN
Linköping, Sweden
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janax@li.icl.se

End of glowbugs V1 #30

%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%% GlowBugs %%%%%

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Created by **Steve Modena, AB4EL**
Comments and suggestions to **modena@SunSITE.unc.edu**
